

APRIL 2023

Toyota's Goal:
**Reduce carbon emissions
as much as possible,
as soon as possible.**



Toyota's commitments:

Toyota is committed to offering a full array of electrified vehicle options to give all our customers the opportunity to reduce their carbon footprint.

Toyota has committed to be carbon neutral at all our facilities by 2035 and all our products by 2050.

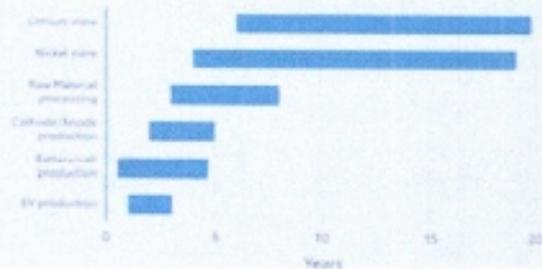
Lexus will be 100% battery electric vehicles by 2035.

There are **three major barriers** to widespread battery electric vehicle adoption in the United States.

- 1. Critical minerals:** More than 300 new lithium, cobalt, nickel, and graphite mines are needed to meet the expected battery demand by 2035. While US battery manufacturing is expected to increase significantly in the next few years, the pace of mineral mining and processing will not keep up, likely creating an imbalance between the raw materials and final production.
- 2. Charging infrastructure:** Only 12% of public chargers are fast chargers, taking 20-60 minutes to get to 80%.¹ Most public chargers can take anywhere from 8-30 hours to charge. To meet the federal ZEV sales targets, 1.2M public chargers are needed by 2030. That amounts to approximately 400 new chargers per day. The pace in 2021 was around 50 per day.² That is in addition to the 28 million private EV chargers needed.
- 3. Affordability:** The average transaction price for a non-battery electric vehicle is \$48,000. The average transaction price for a battery electric vehicle is \$58,000.³ To make a BEV convenient, consumers will also need to install an at-home charger, which adds an additional \$1,300.⁴

Battery Electric Vehicle Supply Chain Leadtimes

Range of typical lead times to initial production for selected steps in EV battery supply chain



Notes: Lead times to mine are included from the start of the supply chain. Lead times to the end of production for other elements lead times are calculated from their start of production.

Sources: 1) McKinsey & Company, "2022 Electric Vehicle Supply Chains," 2022.

TOYOTA

